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- 80% of Alaskan women who gave birth during 1991-1993 initiated breast-feeding at the time of birth.
- Black infants had the lowest prevalence of breast-feeding at birth (56%) and at 6 months (6.7%) of all risk groups examined.
- Only 32% of mothers were breast-feeding their infants when their infant was 6 months of age, compared to a Year 2000 objective of 50%.

Breast-feeding in Alaska, 1991-1993

Introduction

Breast-milk and formula both meet the complete nutritional needs of newborn infants, but many benefits of breast-feeding are not available to a bottle-fed infant, including the transmission of protective anti-infective agents to the newborn, aiding in postpartum recovery and bonding, convenience, and less cost. Because of these advantages of breast-feeding over bottle-feeding, the Year 2000 goals for the U.S. Department of Health and Human Services and the State of Alaska include breast-feeding prevalence objectives for the early postpartum period and at 5 to 6 months postpartum.

We used data from the Alaska Pregnancy Risk Assessment Monitoring System (PRAMS) covering birth years 1991-1993 to evaluate characteristics of women who breast-feed their infants. We determined if those characteristics were different for women who breast-fed their infant at birth compared to women who continued to breast-feed when their infant was 6 months of age. Finally, we compared results in Alaska to the Healthy Alaskans 2000 and the national Year 2000 goals for breast-feeding.

Methods

PRAMS is an ongoing survey of mothers of newborns.[1,2] Two questions on the survey address breast-feeding. The first asks if a woman has ever breast-fed her infant, and if so, for how long. The second asks women who never breast-fed or who stopped breast-feeding to identify factors which prevented them from breast-feeding.

Since the survey questions cover the postpartum period in addition to the prenatal period, PRAMS protocol does not select a mother to receive the survey until her infant is at least 2 months of age. Ideally for PRAMS, the infant will be between 2 and 8 months of age when the survey is filled out by the mother. The age of the infant is determined from the date the mother reports she filled out the survey and the infant's date of birth as recorded on the birth certificate.

We analyzed data from 5031 respondents; the average age of the infant was 4.5 months and 99% of infants were 8 months old or less. The overall response rate was 74%. Since PRAMS is a population-based survey, the percentages reported reflect the percentages of Alaskan resident women who had a live birth during the period 1991-1993.

We used the Kessner index[3] to determine adequacy of prenatal care. We determined regional estimates by collapsing census areas of the mother's residence at the time of

birth. To determine age-specific breast-feeding prevalences, we took the number of infants breast-feeding at a particular age and divided by the number of infants that age or older. We present breast-feeding prevalences without regard to supplementation. Mothers whose baby died or who did not live with her at the time she filled out the survey were not included in these analyses. Only mothers 20 years of age or older were considered in estimates involving years of education. Weighted prevalences and standard errors were calculated with Survey Data Analysis (SUDAAN) software.[4]

Results

Breast-feeding at birth

Overall, 80% of Alaska women who delivered during 1991-1993 had ever breast-fed their infant. This estimate did not vary significantly by year of birth. Of women who had ever breast-fed, 3.6% breast-fed for less than one week. Infants of white women had the highest prevalence of breast-feeding at birth (83%), followed by Alaska Natives (76%), Asians (72%) and blacks (56%) (Table 1). Mothers less than 20 years of age were less likely to breast-feed their infants at birth (71%) than 20-29 year olds (77%) and those 30 years and older (88%). Mothers with less than 12 years of education were significantly less likely to breast-feed their infants at birth (66%) than those with 12 years of education (76%) and those with more than 12 years of education (88%).

Other than black mothers and women with less than 12 years of education, mothers who noted that at least part of their past 12-month family income came from public assistance (such as Aid to Families with Dependent Children [AFDC], Welfare, or Food Stamps) had the lowest breast-feeding prevalence at birth of any group examined (70%) (Table 1). The prevalence of breast-feeding at birth was 71% among mothers who were not married, 72% among mothers who said they had no support in raising their child, 73% among mothers who were on the Women, Infants, and Children (WIC) program during their pregnancy, and 75% among mothers who had less-than-adequate prenatal care during their pregnancy. All these estimates were significantly lower than the overall prevalence of breast-feeding at birth.

Table 1. Percent of Alaskan women who were breast-feeding their infants, 1991-1993.

	At Birth		At 6 months	
Indicator	%	(95% CI*)	%	(95% CI)
Age at Delivery				
<20 years	71.4	(67.1, 75.7)	13.1†	(3.3, 22.9)
20-29 years	77.3	(75.3, 79.3)	30.2	(24.7, 35.7)
30 years and older	87.7	(85.9, 89.5)	42.4	(34.2, 50.6)
Race				
White	83.4	(81.8, 85.0)	34.0	(27.7, 40.3)
Alaska Native	75.7	(74.1, 77.3)	33.6	(29.1, 38.1)
Asian/Other	71.9	(65.0, 78.8)	20.0†	(5.7, 34.3)
Black	55.8	(46.0, 65.6)	6.7†	(0.0, 14.5)
Education‡				
<12 years	66.3	(61.6, 71.0)	23.6	(11.4, 35.8)
12 years	76.1	(73.7, 78.5)	30.6	(24.3, 36.9)
>12 years	88.1	(86.3, 89.9)	40.4	(32.8, 48.0)
On public assistance	69.6	(66.7, 72.5)	24.7	(17.4, 32.0)
Not married	70.6	(67.9, 73.3)	20.1	(13.6, 26.6)
No support in raising this child	72.1	(66.4, 77.8)	24.8†	(9.7, 39.9)
On WIC§ during pregnancy	73.4	(70.9, 75.9)	25.9	(19.2, 32.6)
Had less than adequate prenatal care during pregnancy	74.5	(72.9, 76.1)	31.2	(26.1, 36.3)
Overall 1991-1993	80.0	(78.6, 81.4)	31.9	(27.6, 36.2)

* Confidence Interval
† Cell size < 25.
‡ For women > 19 years of age.
§ A supplemental food program for low-income pregnant, breast-feeding, and postpartum Women, Infants, and Children under age five who are at nutritional risk.

Breast-feeding prevalence varied by region (Figure 1). Three regions had a prevalence significantly higher than the overall prevalence: Southcentral (88%), Southeast (88%), and the Yukon-Kuskokwim (85%). Two regions had prevalences significantly lower than the overall prevalence: North/Northwest (68%) and Interior (67%).

Duration of breast-feeding

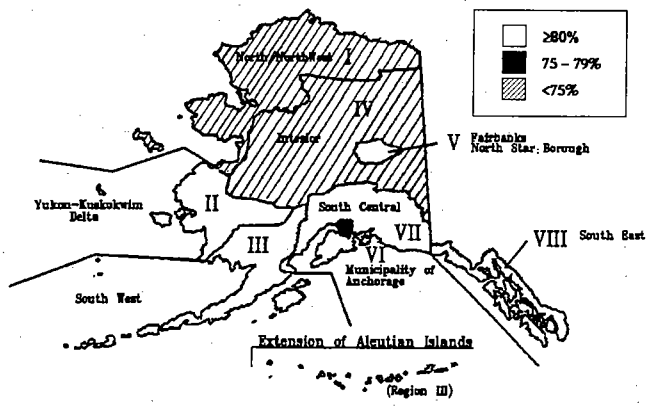
Among infants who had breast-fed 1 week or more, the average breast-feeding duration was 3.3 months (range: 0.25,10.8). The breast-feeding prevalence at 6 months declined 60% compared to breast-feeding at birth. At 2 months of age, 59% of newborns were breast-feeding, 45% at 4 months, and 32% at 6 months. Alaska Native mothers showed the lowest decline in breast-feeding prevalence, whereas black mothers showed the steepest decline over the six month period (Figure 2).

Of the three age groups examined, teenagers had the highest attrition rate–only 13% were still breast-feeding their infants during the sixth month, a decline of 82% (Table 1). Among women 20-29 years old, 30% breast-fed their infants at 6 months, whereas 42% of women 30 years and older were still breast-feeding their infants at 6 months. Among mothers who were not married, 20% breast-fed their infant at 6 months. Prevalences for breast-feeding at 6 months for teenage mothers, unmarried mothers, and black mothers were significantly lower than the overall prevalence of breast-feeding at 6 months. The prevalences of breast-feeding at 6 months were higher for women in other risk groups and were not significantly different from the overall prevalence of breast-feeding at 6 months.

Reasons not to breast-feed

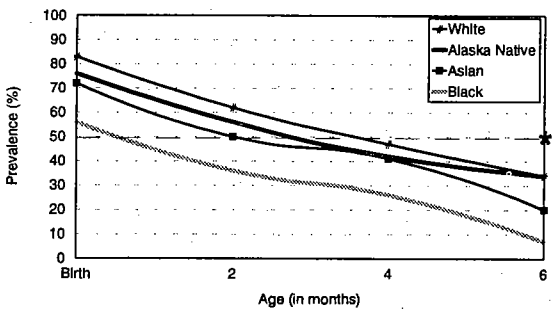
Among mothers who were not currently breast-feeding at the time they completed the survey, the top three reasons to never breast-feed or to quit breast-feeding were "Didn't want to" (26%), "Planning to go to work or school" (23%), and "Baby didn't breast-feed very well" (19%). These reasons remained in this order by race of the mother with the exception of Asians whose primary reason for not breast-feeding was returning to work or school. Nearly half (45%) of black mothers who were not breast-feeding gave the reason "Didn't want to" compared to 30% of Alaska Natives, 23% of white mothers, and 21% of Asian mothers.

Figure 1. Weighted prevalence (%) of breast-feeding at birth by region*, Alaska, PRAMS, 1991-1993.



* Based on mother's residence at time of birth

Figure 2. Weighted prevalence (%) of breast-feeding at selected bimonthly intervals by mother's race, Alaska, PRAMS, 1991-1993.



* Minimum breast-feeding prevalence at 6 months for Healthy Alaskans 2000 objective.
Note: Breast-feeding prevalences at 6 months for Asians and blacks are based on cell sizes <25.

Discussion

The American Academy of Pediatrics advocates breast-feeding as the optimal form of nutrition for infants since nutritional, immunologic, economic, and psychologic advantages can be derived from this basic human function.[5] For example, breast-feeding may protect against invasive pneumococcal disease,[6] otitis media,[7,8] and sudden infant death syndrome (SIDS).[9]

The U.S. Department of Health and Human Services' Year 2000 objective for breast-feeding during the early postpartum period is 75%[10], a goal Alaska has already achieved. Additionally, Alaska's prevalence of breast-feeding at birth exceeds the 1992 nation's prevalence of 54%.[10] Although overall Alaska has met the Year 2000 objectives for breast-feeding at birth, some racial groups have not met the objective including Asians (71%) and blacks (56%). Nationally, only 28% of blacks during 1992 breast-fed at birth.[10] While black mothers had the lowest breast-feeding prevalence at birth of all risk groups examined, mothers who were young, uneducated, unmarried, on public assistance, and who had less than adequate prenatal care or no support raising their child also had lower breast-feeding prevalences at birth. These mothers have in common the characteristic of belonging to less advantaged groups. The disparities we observed between advantaged and less advantaged groups raise questions of equity regarding the distribution of preventative and educational resources and suggest that further work is warranted to promote breast-feeding at birth among high risk groups.

The national Year 2000 objective for breast-feeding at 5-6 months of age is 50%.[10] This is the minimum prevalence for the Healthy Alaskans 2000 goals.[11] While Alaska's prevalence of breast-feeding at 6 months (32%) does not currently meet this objective, it is higher than the 1992 national estimate for breast-feeding at 5-6 months of age (19%).[10] To increase the overall prevalence of breast-feeding at 6 months from 32% to 50% to reach the Year 2000 goal, 2160 more women per year must continue breast-feeding until 6 months (assuming 12000 live births a year).

The most common reason for not breast-feeding, particularly among black mothers, was personal preference ("I didn't want to"). This reason for not breast-feeding may be more amenable to change through education than school- or work-related reasons. Although a fifth of women stated they did not breast-feed because the "baby didn't breast-feed very well", the vast majority of mother-infant pairs are physically able to successfully perform breast-feeding. This suggests that appropriate counseling of mothers by health care providers and nutrition counselors may have a significant impact on initiating and continuing breast-feeding. Other interventions which may increase breast-feeding prevalence include the distribution of educational information through the media, the provision of workplace facilities and daycare centers near work which make breast-feeding practical, and agency policies which endorse breast-feeding as the preferred method of infant feeding.[12]

The data presented here have several limitations. PRAMS collects self-reported data which are subject to recall bias by the mother. Additionally, the reliability of prevalence estimates depends on the actual, unweighted number of respondents in a category. Some of the prevalence estimates reported here are based on small samples; interpreting and reporting weighted numbers that are based on a small, unweighted number of respondents can be misleading. Finally, all prevalences discussed are for breast-feeding in general, regardless of other nutritional supplementation.

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References

1 Adams MM, Shulman HB, Bruce C, Hogue C, Brogan D, The PRAMS Working Group. The Pregnancy Risk Assessment Monitoring System: Design, questionnaire, data collection and response rates. Paediatr Perinat Epidemiol 1991;5:333-46.

2 Perham-Hester K. Drinking during pregnancy linked to other health risks: Results from the Alaska PRAMS survey. State of Alaska, Dept. of Health & Social Services, Division of Public Health, Section of Maternal, Child, and Family Health. Family Health Dataline, May 1995.

3 Kessner D. Infant Death: An analysis by maternal risk and health care. Institute of Medicine, Contrasts in Health Status 1973;1:58-60.

4 Shah BV, Barnwell B, Bieler GS. SUDAAN user's manual: Software for analysis of correlated data, release 6.40. Research Triangle Institute 1995.

5 American Academy of Pediatrics Committee on Nutrition. Encouraging breast-feeding. Pediatrics 1980;65:657-8.

6 Gessner BD, Ussery XT, Parkinson AJ, Breiman RF. Risk factors for invasive disease caused by *Streptococcus pneumoniae* among Alaska Native children younger than two years of age. Pediatr Infect Dis J 1995;14:123-8.

7 Duncan B, Ey J, Holberg CJ, et al. Exclusive breast-feeding for at least 4 months protects against otitis media. Pediatrics 1993; 91:867-72.

8 Goldman AS. The immune system of human milk: antimicrobial, anti-inflammatory, and immunomodulating properties. Pediatr Infect Dis J 1993;12:664-71.

9 Murphy JF, Newcombe RG, Sibert JR. The epidemiology of sudden infant death syndrome. J Epidemiol Community Health 1982;36:17.

10 National Center for Health Statistics. Healthy People 2000 Review, 1993. Hyattsville, Maryland: Public Health Service. 1994; 88.

11 Healthy Alaskans 2000: Charting the course of public health for the decade. Department of Health and Social Services, Division of Administrative Services. February 1994;55.

12 American Academy of Pediatrics Policy Statement Based on Task Force Report. The promotion of breast-feeding. Pediatrics 1982;69:654-61.

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